

Please enter the following new claims:

Sub B1  
Sub E1  
15. A liposomal formulation comprising liposomes that comprise a porphyrin macrocycle photosensitizer and one or more sugars

wherein said liposomes are fast breaking and rapidly release the photosensitizer into the bloodstream upon *in vivo* administration.

16. The liposomal formulation of claim 15 in freeze-dried form.

17. The liposomal formulation of claim 15 wherein said sugars are selected from disaccharides or polysaccharides.

18. The liposomal formulation of claim 17 wherein said disaccharides are selected from lactose or trehalose.

19. The liposomal formulation of claim 15 wherein the lipid bilayer of said liposomes consists essentially of dimyristoyl phosphatidyl choline and egg phosphatidyl glycerol.

20. The liposomal formulation of claim 15 wherein said porphyrin macrocycle photosensitizer is a hydro-monobenzoporphyrin (Gp) of the formulas set forth in Figure 1-1 or 1-2 having a light absorption maximum between 670-780 nm, mixtures thereof, and the metalated and labeled forms thereof,

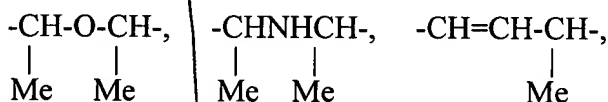
wherein each  $R^1$  and  $R^2$  is independently selected from the group consisting of carbalkoxy (2-6C), alkyl (1-6C) sulfonyl, aryl (6-10C) sulfonyl, aryl (6-10C); cyano; and -CONR<sup>5</sup>CO- wherein  $R^5$  is aryl (6-10C) or alkyl (1-6C);

each  $R^3$  is independently carboxyalkyl (2-6C) or a salt, amide, ester or acylhydrazone thereof, or is alkyl (1-6C); and

$R^4$  is -CH=CH<sub>2</sub>, -CHOR<sup>4'</sup>, -CHO, -COOR<sup>4'</sup>, -CH(OR<sup>4'</sup>)CH<sub>3</sub>, -CH(OR<sup>4'</sup>)CH<sub>2</sub>OR<sup>4'</sup>, -CH(SR<sup>4'</sup>)CH<sub>3</sub>, -CH(NR<sup>4'</sup>)CH<sub>3</sub>, -CH(CN)CH<sub>3</sub>, -CH(COOR<sup>4'</sup>)CH<sub>3</sub>, -CH(OOCR<sup>4'</sup>)CH<sub>3</sub>, -CH(halo)CH<sub>3</sub>, or -CH(halo)CH<sub>2</sub>(halo), wherein  $R^{4'}$  is H, alkyl (1-6C) optionally substituted with a hydrophilic substituent,

an organic group of less than 12C resulting from direct or indirect derivatization of vinyl, or

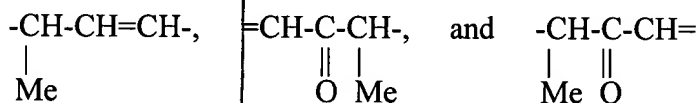
1-3 tetrapyrrole-type nuclei of the formula -L-P wherein -L- is selected from the group consisting of:



(a)

(b)

(c)



(d)

(e)

(f)

and P is selected from the group consisting of Gp which is of the formula of Figure 1-2, but lacking R<sub>4</sub> and conjugated through the position shown as occupied by R<sup>4</sup> to L;

with the proviso that, if R<sup>4</sup> is -CH=CH<sub>2</sub>, both R<sup>3</sup> groups cannot be carbalkoxyethyl.

21. The liposomal formulation of claim 20 wherein each R<sup>3</sup> is -CH<sub>2</sub>CH<sub>2</sub>COOH or salt, amide, ester or acylhydrazone thereof.

22. The liposomal formulation of claim 20 wherein each of R<sup>1</sup> and R<sup>2</sup> is carbalkoxy (2-6C).

23. The liposomal formulation of claim 21 wherein each of R<sup>1</sup> and R<sup>2</sup> is carbalkoxy (2-6C).

24. The liposomal formulation of claim 20 wherein said hydro-monobenzoporphyrin (Gp) is selected from the group consisting of:

BPD-DA wherein R<sup>1</sup> and R<sup>2</sup> thereof are carbomethoxy;

BPD-DB wherein R<sup>1</sup> and R<sup>2</sup> thereof are carbomethoxy;

BPD-MA wherein R<sup>1</sup> and R<sup>2</sup> thereof are carbomethoxy and R is methyl; and

BPD-MB wherein R<sup>1</sup> and R<sup>2</sup> thereof are carbomethoxy and R is methyl.

25. The liposomal formulation of claim 24 wherein said hydro-monobenzoporphyrin (Gp) is BPD-MA wherein R<sup>1</sup> and R<sup>2</sup> thereof are carbomethoxy and R is methyl.

26. The liposomal formulation of claim 19 wherein the amounts of photosensitizer, dimyristoyl phosphatidyl choline, and egg phosphatidyl glycerol in said liposomes are, relative to each other on a per weight basis, about

0.2 to 0.4 of porphyrin; 0.94 to 1.88 of dimyristoyl phosphatidyl choline; and 0.65 to 1.30 of egg phosphatidyl glycerol.

27. The liposomal formulation of claim 26 wherein the amount of sugar, relative to said amounts of photosensitizer, dimyristoyl phosphatidyl choline, and egg phosphatidyl glycerol in said liposomes on a per weight basis, about 8.0 to 12.0 of sugar when said sugar is a disaccharide, or about half that amount if said sugar is a monosaccharide.

28. The liposomal formulation of claim 19 further comprising an antioxidant.

29. The liposomal formulation of claim 28 wherein said antioxidant is butylated hydroxytoluene or L-ascorbic acid 6-palmitate.

30. The liposomal formulation of claim 15 further comprising a pharmaceutically acceptable excipient.

31. A method of providing photodynamic therapy to a subject comprising administering a formulation according to claim 15 to said subject wherein the porphyrin macrocycle photosensitizer, after release from said formulation, is capable of localizing to target tissues or cells, and

irradiating said tissues or cells at an appropriate wavelength of light after passage of sufficient time for said porphyrin macrocycle photosensitizer to localize.